

Appl. No. 09/706,926

Amdt. dated September 22, 2009

Request for continued examination after final office action of May 26, 2009

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for representing cartographic data in a computer-based system, comprising:

providing a cartographic database containing a sequence of latitude and longitude data points indicating locations along a geographic feature, wherein the sequence of latitude and longitude data points provide a data point representation of the geographic feature;

using the latitude and longitude data points to generate a parameterized function representing the geographic feature;

computing a plurality of wavelet coefficients from said parameterized function representing the geographic feature, wherein said wavelet coefficients obtained with a wavelet, wherein said wavelet being one of a family of functions having a form

$\psi_{ab}(x) = |a|^{-1/2} \psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation

parameter, b is called a translation parameter, and x is an independent variable, wherein said computing the wavelet coefficients includes applying a wavelet transform to said parameterized function defined by the data points representing the geographic feature;

assigning each of the computed wavelet coefficients to at least one of a plurality of display scales for a map display;

indexing the wavelet coefficients by the assigned display scales for the map display; and

after said step of computing, storing the wavelet coefficients in a computer-usable database on a physical storage medium to provide a wavelet-based representation of the geographic feature, wherein the wavelet-based representation has a smaller data size than the data point representation of the geographic feature.

Claim 2 (cancelled)

Claim 3 (previously presented): The method of claim 1, wherein the data points include altitude.

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Claim 4 (original): The method of claim 1, wherein the geographic feature is the boundary of a feature selected from the group consisting of a road, waterway, building, park, lake, railroad track, and airport.

Claim 5 (cancelled)

Claim 6 (previously presented): The method of claim 1, wherein the step of computing the wavelet coefficients includes:

computing the wavelet coefficients by performing a least-squares fit.

Claim 7 (previously presented): The method of claim 1, wherein the wavelet coefficients are computed using a semi-discrete orthonormal wavelet transform.

Claim 8 (currently amended): A method of displaying on a computer output device a representation of a geographic feature, comprising:

identifying a display scale for displaying the representation of the geographic feature, wherein the display scale is one of several display scale levels useable for a zooming operation of a map display;

retrieving from a computer-usable database a plurality of wavelet coefficients associated with the geographic feature at the identified display scale, wherein a wavelet being one of a family of functions having a form $\psi_{ab}(x) = |a|^{-1/2} \psi\left(\frac{x-b}{a}\right)$, wherein $\psi_{ab}(x)$ is called a mother wavelet, a is called a dilation parameter, b is called a translation parameter, and x is an independent variable, the wavelet coefficients being derived from a plurality of latitude and longitude data points specifying geographic locations on the geographic feature, wherein each of the wavelet coefficients are assigned to at least one of the of display scale levels;

generating a parameterized function representing the geographic feature at the display scale using the retrieved wavelet coefficients; and

displaying a line on the computer output device corresponding to the parameterized function representing the geographic feature at the display scale.

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Claim 9 (previously presented): The method of claim 8, further comprising:

performing the zooming operation to display another representation of said geographic feature at a different scale level by retrieving the wavelet coefficients associated with the geographic feature at the different display scale.

Claim 10 (original): The method of claim 8, wherein the geographic feature is selected from the group consisting of a road, waterway, building, park, lake, railroad track, and airport.

Claims 11-27 (canceled)